Applicants: MALTSEV, Alexander, et al.
Serial No.:   10/743,309
Filed: December 23, 2003
Page 2

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the Application. Please amend the claims to read as follows and cancel without prejudice or disclaimer the claims marked as canceled:

<u>Listing of Claims</u>

1.   **(Currently Amended)** An apparatus comprising:

 a data packet generator to generate a data packet including:

 a compatibility preamble field <u>subdivided into a short combined preamble, a long combined preamble, and a combined signal field,</u>

 two or more training fields <u>separate from said compatibility preamble field,</u> and

 a physical layer convergence protocol header that includes bit and power loading information.

2.   **(Canceled)**

3.   **(Currently Amended)** The apparatus of claim [[2]] 1, wherein the short combined preamble comprises:

 two or more short preambles adapted to be transmitted over two or more neighboring sub-channels, and wherein at least one of the two or more short preambles is phase rotated relative to the other short preambles.

4.   **(Currently Amended)** The apparatus of claim [[2]] 1, wherein the long combined preamble comprises:

 two or more long preambles adapted to be transmitted over two or more neighboring sub-channels, and wherein at least one of the two or more long preambles is phase rotated relative to the other long preambles.

5.   **(Currently Amended)** The apparatus of claim [[2]] 1, wherein the combined signal field comprises:

 two or more signal fields adapted to be transmitted over two or more neighboring sub-channels, and wherein at least one of the two or more signal fields is phase rotated relative to the other signal fields.

Applicants: MALTSEV, Alexander, et al.
Serial No.:   10/743,309
Filed: December 23, 2003
Page 3

6. **(Previously Presented)** The apparatus of claim 1, wherein the two or more training fields comprise:

a prefix training field and a postfix training field, both fields having substantially the same format.

7. **(Original)** The apparatus of claim 1, wherein the data packet comprises at least one data field fragmented into two or more fragments separated by at least one middle-fix training field.

8. **(Previously Presented)** The apparatus of claim 6, wherein the two or more training fields further comprise:

a middle-fix training field having substantially the same format as the prefix training field and the postfix training field.

9. **(Previously Presented)** The apparatus of claim 7, comprising:

a modulator to modulate a first of the two or more fragments using a first modulation scheme and a second of the two or more fragments using a second modulation scheme.

10. **(Canceled)**

11. **(Original)** The apparatus of claim 9 comprising:

an encoder to encode a first fragment of the two or more fragments by a first code and a second fragment of the two or more fragments by a second code.

12. **(Currently Amended)** The apparatus of claim 1, wherein at least one of the two or more training fields is ~~adapted~~ to provide long term channel prediction.

13. **(Currently Amended)** A method comprising:

generating a data packet including:

a compatibility preamble field <u>subdivided into a short combined preamble, a long combined preamble, and a combined signal field</u>,

two or more training fields <u>separate from said compatibility preamble field</u>, and

a physical layer convergence protocol header that includes bit and power loading information; and

transmitting said data packet.

Applicants: MALTSEV, Alexander, et al.
Serial No.:   10/743,309
Filed: December 23, 2003
Page 4

14. **(Currently Amended)** The method of claim [[43]] 13, wherein the short combined preamble comprises two or more short preambles, and wherein said step of transmitting comprises:

transmitting the two or more short preambles over two or more neighboring sub-channels; and

rotating a phase of at least one of the two or more short preambles relative to the other short preambles.

15. **(Currently Amended)** The method of claim [[43]] 13, wherein the long combined preamble comprises two or more long preambles, and wherein said step of transmitting comprises:

transmitting the two or more long preambles over two or more neighboring sub-channels; and

rotating a phase of at least one of the two or more long preambles relative to the other long preambles.

16. **(Currently Amended)** The method of claim [[43]] 13, wherein the combined signal field comprises two or more signal fields, and wherein said step of transmitting comprises:

transmitting the two or more signal fields over two or more neighboring sub-channels; and

rotating a phase of at least one of the two or more signal fields relative to the other signal fields.

17. **(Previously Presented)** The method of claim 13, wherein the data packet comprises at least one data field, and said step of generating comprises:

fragmenting the data field of the data packet into two or more fragments; and

separating the fragments by a middle-fix training field.

18. **(Previously Presented)** The method of claim 17 comprising:

modulating a first of the two or more fragments using a first modulation scheme and a second of the two or more fragments using a second modulation scheme.

19. **(Previously Presented)** The method of claim 17 comprising:

encoding a first of the two or more fragments using a first code and a second of the two or more fragments using a second code.

Applicants: MALTSEV, Alexander, et al.
Serial No.: 10/743,309
Filed: December 23, 2003
Page 5

20. **(Currently Amended)** The method of claim 13, wherein at least one of the two or more training fields is ~~adapted~~ to provide long term channel prediction.

21. **(Currently Amended)** A wireless communication device comprising:

a data packet generator to generate a data packet including:

a compatibility preamble field <u>subdivided into a short combined preamble, a long</u> <u>combined preamble, and a combined signal field,</u>

two or more training fields <u>separate from said compatibility preamble field</u>, and

a physical layer convergence protocol header that includes bit and power loading information; and

a dipole antenna to transmit the data packet.

22. **(Canceled)**

23. **(Currently Amended)** The wireless communication device of claim [[22]] <u>21</u>, wherein the short combined preamble comprises:

two or more short preambles ~~adapted~~ to be transmitted over two or more neighboring subchannels, and wherein at least one of the two or more short preambles is phase rotated relative to other short preambles.

24. **(Currently Amended)** The wireless communication device of claim [[22]] <u>21</u>, wherein the long combined preamble comprises:

two or more long preambles ~~adapted~~ to be transmitted over two or more neighboring subchannels, and wherein at least one of the two or more long preambles is phase rotated relative to other long preambles.

25. **(Currently Amended)** The wireless communication device of claim [[22]] <u>21</u>, wherein the combined signal field comprises:

two or more signal fields ~~adapted~~ to be transmitted over two or more neighboring subchannels, and wherein at least one of the two or more short preambles is phase rotated relative to other short preambles.

26. **(Previously Presented)** The wireless communication device of claim 21, wherein the two or more training fields comprise:

a prefix training field and a postfix training field, both fields having substantially the same format.

Applicants: MALTSEV, Alexander, et al.
Serial No.:   10/743,309
Filed: December 23, 2003
Page 6

27. **(Original)** The wireless communication device of claim 21, wherein the data packet comprises at least one data field fragmented into two or more fragments separated by at least one middle-fix training field.

28. **(Previously Presented)** The wireless communication device of claim 26, wherein the two or more training fields further comprise:

a middle-fix training field having substantially the same format as the prefix training field and the postfix training field.

29. **(Previously Presented)** The wireless communication device of claim 27, comprising:

a modulator to modulate a first of the two or more fragments using a first modulation scheme and a second of the two or more fragments using a second modulation scheme.

30. **(Canceled)**

31. **(Original)** The wireless communication device of claim 29 comprising:

an encoder to encode a first fragment of the two or more fragments by a first code and a second fragment of the two or more fragments by a second code.

32. **(Currently Amended)** A wireless communication system comprising:

two or more wireless communication devices wherein at least one of the two or more wireless communication devices include:

a data packet generator to generate a data packet including:

a compatibility preamble field subdivided into a short combined preamble, a long combined preamble, and a combined signal field,

two or more training fields separate from said compatibility preamble field, and

a physical layer convergence protocol header that includes bit and power loading information.

33. **(Canceled)**

34. **(Currently Amended)** The wireless communication system of claim [[33]] 32, wherein the short combined preamble comprises:

two or more short preambles adapted to be transmitted over two or more neighboring sub-channels, and wherein at least one of the two or more short preambles is phase rotated relative to the other short preambles.

Applicants: MALTSEV, Alexander, et al.
Serial No.:   10/743,309
Filed: December 23, 2003
Page 7

35.   **(Currently Amended)** The wireless communication system of claim [[33]] 32, wherein the
      long combined preamble comprises:

      two or more long preambles adapted to be transmitted over two or more neighboring sub-
      channels, and wherein at least one of the two or more long preambles is phase rotated
      relative to the other long preambles.

36.   **(Currently Amended)** The wireless communication system of claim claim, 33 32, wherein
      the combined signal field comprises:

      two or more signal fields adapted to be transmitted over two or more sub-channels, and
      where at least one of the two or more short preambles is phase rotated relative to the other
      short preambles.

37.   **(Previously Presented)** The wireless communication system of claim 32, wherein the two
      or more training fields comprise:

      a prefix training field and a postfix training field, both fields having substantially the same
      format.

38.   **(Original)** The wireless communication system of claim 32, wherein the data packet
      comprises at least one data field fragmented into two or more fragments separated by at
      least one middle-fix training field.

39.   **(Previously Presented)** The wireless communication system of claim 37, wherein the two
      or more training fields further comprise:

      a middle-fix training field having substantially the same format as the prefix training field
      and the postfix training field.

40.   **(Previously Presented)** The wireless communication system of claim 38, comprising:

      a modulator to modulate a first of the two or more fragments using a first modulation
      scheme and a second of the two or more fragments using a second modulation scheme.

41.   **(Canceled)**

42.   **(Previously Presented)** The wireless communication system of claim 38 comprising:

      an encoder to encode a first fragment of the two or more fragments by a first code and a
      second fragment of the two or more fragments by a second code.

43.   **(Canceled)**

Applicants: MALTSEV, Alexander, et al.
Serial No.:   10/743,309
Filed: December 23, 2003
Page 8

44.   (Currently Amended) The wireless communication device of claim 21, wherein at least

one of the two or more training fields is ~~adapted~~ to provide long term channel prediction.

45.   (Currently Amended) The wireless communication system of claim 32, wherein at least

one of the two or more training fields is ~~adapted~~ to provide long term channel prediction.